

AMENDMENTS TO THE CLAIMS:

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This listing of Claims will replace all prior versions, and listings, of claims in the application.

1. (Original) A method for detecting the activity of P2Y15 in a sample comprising the steps of:
  - a) incubating a sample comprising P2Y15 and a ligand under conditions which allow binding of P2Y15 and the ligand, and
  - b) detecting a second messenger, wherein said ligand is AMP or adenosine receptor ligand.
2. (Original) The method of claim 1 further comprising the steps of:
  - a) incubating a second sample comprising P2Y15 in the absence of the ligand under conditions which allow binding of P2Y15 and the ligand, and
  - b) detecting a second messenger.
3. (Original) The method of claim 1 wherein said sample comprises cells expressing P2Y15.
4. (Original) The method of claim 1 wherein said sample comprises cell membranes bearing P2Y15.
5. (Original) A method of screening for an agent to modulate P2Y15 activity using cells expressing P2Y15, said method comprising:
  - a) incubating a first sample of said cells in the presence of said agent and a second sample of said cells in the absence of said agent, both said samples under conditions which allow binding of AMP or adenosine receptor ligand to P2Y15;
  - b) detecting a signalling activity of P2Y15 polypeptide in said first and second samples, and

- c) comparing the results of said second messenger assays for said first and second samples.
6. (Cancelled)
  7. (Cancelled)
  8. (Cancelled)
  9. (Original) A method of identifying an agent that modulates the function of P2Y15, said method comprising :
    - a) contacting a P2Y15 polypeptide in the presence and absence of an agent under conditions permitting the binding of said AMP or adenosine receptor ligand to said P2Y15 polypeptide; and
    - b) measuring the binding of said P2Y15 polypeptide to said agent, relative to the binding in the absence of said agent, wherein an agent which changes binding is identified as a potential therapeutic agent for decreasing or increasing the function of P2Y15.
  10. (Original) The method of claim 9 wherein said measuring is performed using a method selected from label displacement, surface plasmon resonance, fluorescence resonance energy transfer, fluorescence quenching, and fluorescence polarization.
  11. (Amended) The method of ~~any one of claims 5 to 10~~ claim 5 wherein said agent is selected from the group consisting of a natural or synthetic peptide, a polypeptide, an anti- body or antigen-binding fragment thereof, a lipid, a carbohydrate, a nucleic acid, and a small organic molecule.
  12. (Amended) The method of ~~any one of claims 5 to 10~~ claim 5 wherein said step of measuring a signalling activity of said P2Y15 polypeptide comprises detecting a change in the level of a second messenger.
  13. (Amended) The method of ~~either of claims 5 to 10~~ claim 5 wherein the step of detecting a signalling activity comprises measurement of guanine nucleotide binding or exchange, adenylate cyclase activity, cAMP, protein kinase C activity, phosphatidylinositol breakdown, diacylglycerol, inositol triphosphate, intracellular

calcium, arachinoid acid concentration, MAP kinase activity, tyrosine kinase activity, reporter gene expression.

14. (Cancelled)

15. (Cancelled)

16. (Cancelled)

17. (Cancelled)

18. (Cancelled)